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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/778,001	02/11/2004	Zoran Coric	3123-546	3362

7590 04/27/2007
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EXAMINER

OLSON, JASON C

ART UNIT	PAPER NUMBER
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2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/778,001

Applicant(s)

CORIC, ZORAN

Examiner

Jason C. Olson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-32 is/are allowed.
- 6) ☒ Claim(s) 33, 34, 36, 37, 43 and 44 is/are rejected.
- 7) ☒ Claim(s) 35 and 38-42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 235 from figure 2A, 1236 from figure 12, 1512g from figure 15G, and 1512h from figure 15H.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 422 in regards to figure 4C as mentioned on page 16, line 7 of the specification.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 1, 5, 6, and 14 are objected to because of the following reasons: the claims recite the limitation "configured to". It has been held that the recitation that an element is "configured

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to” perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 33, 34, 36, 37, 43, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asgari et al. (U.S. Pat. 6,369,974), hereafter “Asgari” in view of Chainer et al. (U.S. Pat. 6,476,989), hereafter “Chainer”.

Regarding claim 33, Asgari teaches a data read/write device (see figure 2, item 10) having a data recording disk (see figure 2, item 12) with a plurality of data tracks and servo information thereon defining a plurality of null points (see figure 7; the Gray code or track ID define a plurality of tracks, with a servo pattern or servo information written thereon defining a plurality of null points at the intersection of servo burst D and C, labeled as Track ID 0-4) and a head (see figure 2, item 120) positionable near a destination location, with respect to said data tracks, by a head positioning device (see figure 2, item 20) under control of a controller (see col. 6, ln. 43-48) comprising: means for obtaining first information indicative of characteristics of said head positioning devices and said controller (see col. 12, ln. 45-col. 13, ln. 4 and figures 2 and 14; the closed loop gain of the control loop 18 is indicative of characteristics of the head

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position device and the controller); means for calculating at least a first correction value using a position of at least one of said null points to calculate said first correction value (see col. 12, ln. 56-58, col. 13, ln. 12-22 and col. 17, ln. 19-22; the servo seam is the null point and the position error or off-track positions are measured from either side of the servo seam. The error is used to determine the open loop gain, which in turn is used to determine correction coefficients); means for controlling said head positioning devices using said first correction value to provide for stability of head positioning, even when tracks of said disk are noncoherent (see col. 23, ln. 10-17 and figure 12, the linear compensation coefficients correct for the STW Track Spacing Error or noncoherent tracks).

Asgari fails to teach means for obtaining second information indicative of repeatable runout for at least a portion of at least a first of said tracks. However, Chainer is relied upon to teach obtaining information indicative of repeatable runout for at least a portion of tracks (see col. 11, ln. 9-16 and col. 12, ln. 8-30; the write width modulation measured is indicative of repeatable runout because an error signal corresponding to the comparison of the normalized readback signal from a dual burst pair to a nominal readback signal is averaged, sector by sector over multiple tracks). It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon the measuring null point deviation of Asgari by applying the teaching of measuring write width modulation as taught by Chainer for the purpose of developing compensation values for write width modulation in order to minimize errors introduced into servo information while servowriting as stated by Chainer in column 4, line 45-48.

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Regarding claim 34, the combination of Asgari and Chainer further teaches means for writing a plurality of corrected servo bursts to said disk (see col. 13, ln. 36-45 and figure 3A of Chainer; the process writes servo patterns to the disk using corrected values). It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon the invention of the combination by applying the teaching of writing corrected servo bursts as taught by Chainer for the purpose as stated above.

Regarding claims 36 and 37, the combination further teaches a plurality of servo bursts having nominal sizes, said plurality of servo bursts defining null points (see figure 7 of Asgari; the servo burst (A-D) have nominal sized and define null points 0-4) and means for calculating said first correction value by a process which includes calculating a value indicative of displacement of a head position at nominal null point positions and change of at least a first servo burst component size from a nominal burst component size (see col. 55-58 and col. 13, ln. 12-22 and figure 13 of Asgari; the gray code defines a seam or null point where the PES should be zero. A measurement of off track positions is a displacement of the head from the null point, which is indicative of a change of a burst component size from a nominal component size as shown as a STW Track Spacing Error in figure 13).

Regarding claims 43 and 44, the combination further teaches means for obtaining correction values are separately for at least some of said plurality of servo burst and means for storing information indicative of said correction values on said disk (see col. 23, ln. 10-24 of Asgari; the correction values are for separate servo bursts as indicated by the subscripts and are stored in a lookup table. It is obvious to an artisan in the art that the lookup table is stored in the

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disk because the disk is a non-volatile memory and will not lose its information when power is lost.

Allowable Subject Matter

Claims 1-32 are allowable over the prior art of record, which fails to teach alone or in combination: calculating a first correction value using first information indicative of characteristics of the head positioning device and characteristics of the controller, and second information indicative of repeatable runout for a portion of tracks, by a process which includes calculating a value indicative of change of at least a first servo burst component size from a nominal burst component size.

Claims 35 and 38-42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record fails to teach alone or in combination: calculating a first correction value by circularly convolving a function of the second information with an Inverse Discrete Fourier Transform of the sum of one and a product of the first and second transfer functions; providing a first correction value equal to a proportionality constant times a value indicative of change of at least a first servo burst component size from a nominal burst component size; determining the first corrective value as a function of a change of at least a first servo component size from a nominal burst component size and of a distance between a destination location and a nominal null point.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason C. Olson whose telephone number is (571)272-7560. The examiner can normally be reached on Monday thru Thursday 7:30-5:30; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea L. Wellington can be reached on (571)272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


JASON OLSON
PATENT EXAMINER 11/2/07